How Can It Benefit Business?
A Survey of
ISO 14001
Certified Companies in Thailand

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Developments in Thailand

- Past 10 Years – Major Economic Growth
- Rapidly Expanding Industrial and Agro-industrial Sectors
- Severe Strain on Infrastructure and Resources
- Increasing Problems:
  - Surface and Groundwater Pollution
  - Soil Pollution
  - Air Pollution
  - Improper Disposal of Hazardous and Solid Waste

Introduction of EMS

The Thai Industry Standards Institute of the Ministry of Industry is responsible for the introduction of EMS (ISO 14001) in Thailand.

Two Thai ISO 14001 Certifiers:

- National Accreditation Council for Environmental Management Systems (NAC-EMS)
- Thailand Environment Institute (TEI)

Promotion of ISO 14001

NAC-EMS and TEI have been promoting ISO 14001 since 1996.

- ISO 14001 Awareness Raising and Training
- EMS Management and Technical Training
- Focus on Industry, Forest, and Service Sectors

Between 1996 and 2000, 127 organizations in Thailand have become ISO 14001 Certified.

US-AEP Role in Promoting ISO 14001

Collaborative Survey with TEI, NAC-EMS, and the U.S. – Asia Environmental Partnership (US-AEP)

US-AEP Goal – Foster **sustainable development** in Asia by encouraging the creation of less polluting, more resource efficient products, processes and services.

The Louis Berger Group, Inc has been working under the US-AEP since 1992.

Purpose of the Survey

- Why did the companies become ISO 14001 certified?
- Have benefits occurred? If so, what type?
- What obstacles have occurred during development of their EMS?

About the Survey

- A questionnaire was sent to ISO 14001 certified companies.
- 45 of the 96 questionnaires (47%) that were mailed were returned.
- 24 senior executives were interviewed.

About the Survey

Of the 45 Responding Companies…

Nature of Business	Approximate Percentage
Manufacturing	**91**
Service	**2**
Others	**7**

Number of Staff	Approximate Percentage
Less than 100 people	**20**
100 to 500 people	**16**
More than 500 people	**62**

About the Survey

- Implementation
- Results of Implementation
- Obstacles

Implementation

Reasons for Implementation of ISO 14001…

Reason	Approximate Percentage
Corporate Policy	**69**
Responsibility to Society	**38**
Better Corporate Image	**20**
Increased Competitiveness	**13**
Reduced Costs	**7**

Implementation

Time Required to Achieve Certification…

Time Required	Approximate Percentage
Less than 1 year	**60**
1-2 years	**38**
More than 2 years	**2**

Implementation

Cost of Achieving Certification…

Total Spent	Approximate Percentage
Less than 100,000 baht ($2,550 USD)	**7**
100,000 to 500,000 baht ($2,550 to $12,750 USD)	**24**
500,000 to 1,000,000 baht ($12,750 to $25,550 USD)	**20**
Over 1,000,000 baht (over $25,550 USD)	**47**
N/A	**2**

Implementation

Tools and Methods applied…

Methods	Conducted	Planned	Under Consideration
Staff training	**98**	**2**	**---**
Recycling and reuse	**75**	**9**	**5**
Improving manufacturing processes	**75**	**2**	**5**
Raw material substitution	**45**	**2**	**18**
Process equipment redesign	**36**	**2**	**21**

Implementation

Keys to Successful Implementation…

- Commitment and awareness of all levels of staff
- Top-level executives' commitment and corporate policy
- A quality management system (ISO 9000)
- Adequate budget
- Ability to identify environmental aspects and impacts

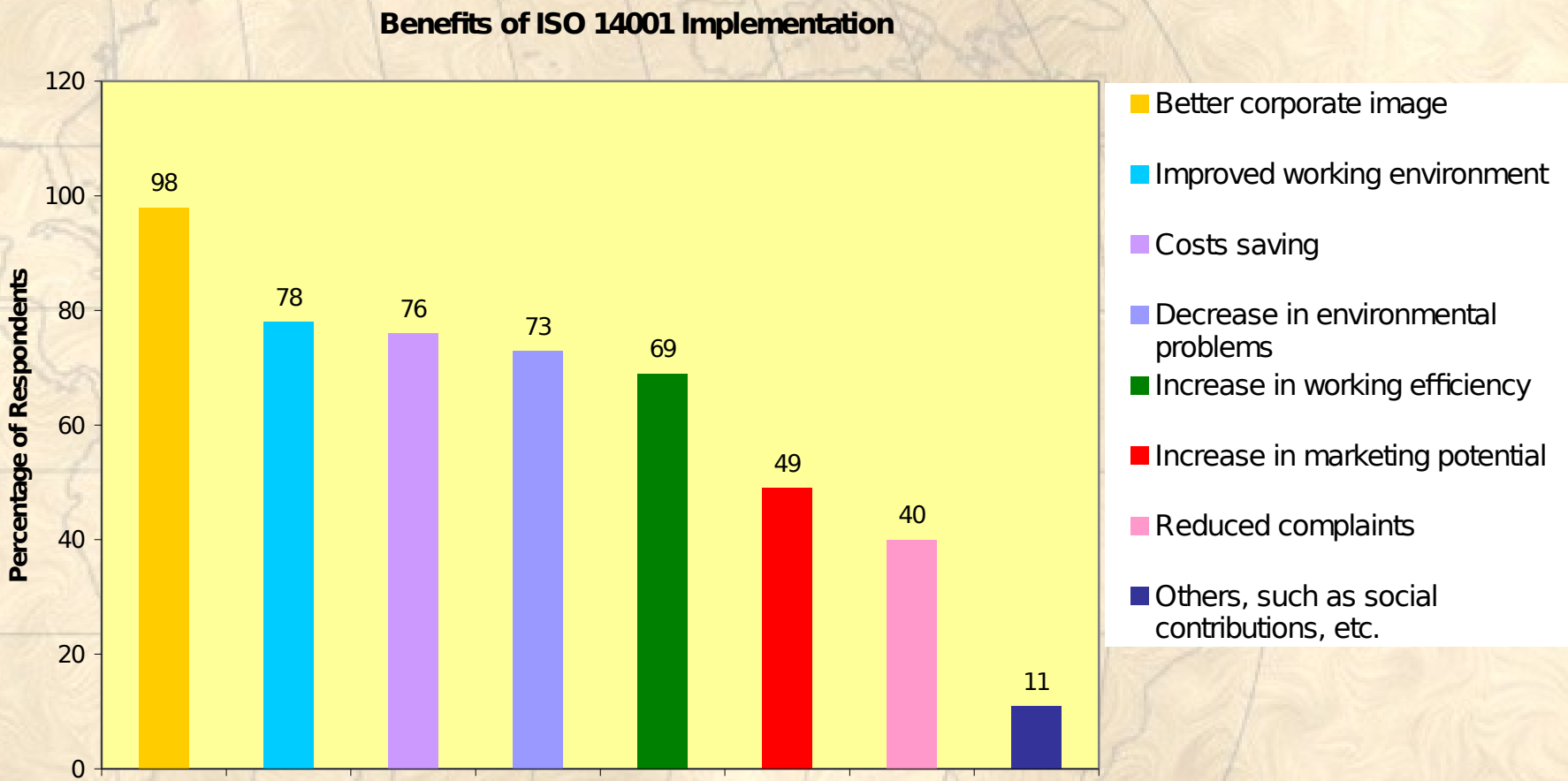
Results of Implementation

Benefits Obtained from ISO 14001 Implementation…

- **Air Pollution:** 40% reduction in particulates and 38% in ozone depleting substances and odors
- **Land/Water Pollution:** 76% reduction in wastewater, 60% in toxic substances, and 29% in wastewater sludge
- Reduced consumption of resources: *paper, water, electricity, chemicals and hazardous materials, fuel, and packaging materials*
- Reduced number of *accidents and illnesses* per worker per year

Results of Implementation

Benefits Obtained from ISO 14001 Implementation…



Results of Implementation

Cost Savings from ISO 14001 Implementation…

- Reduced consumption of resources: *paper, water, electricity, chemicals and hazardous materials, fuel, and packaging materials*.
- Reduced chemical leaks.
- Decreased waste management costs.
- Reduction in solid waste and wastewater.

Results of Implementation

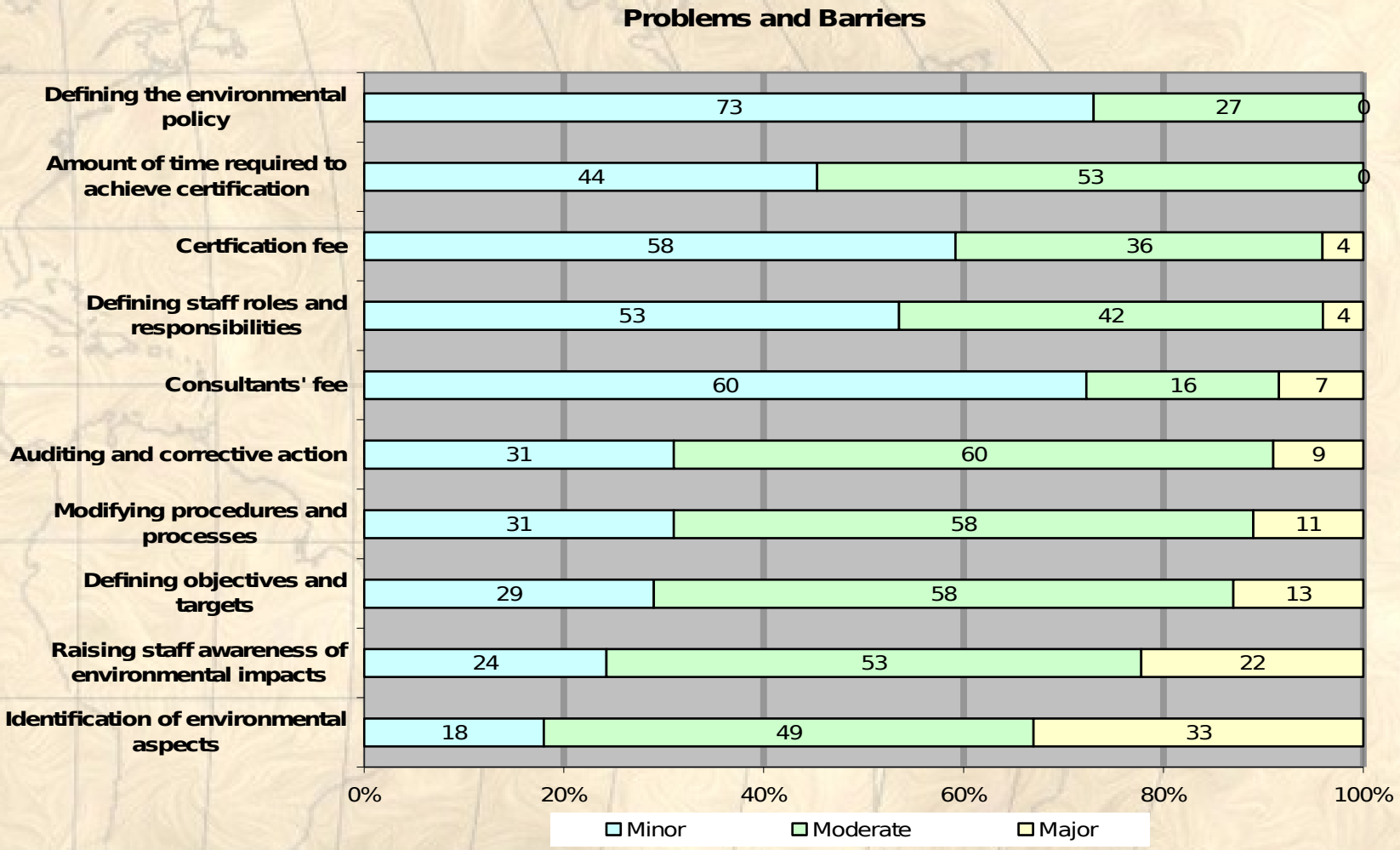
Examples of Financial Costs and Benefits…

Company	Costs of Establishing the System and Achieving Certification						Benefits		
	Costs of Establishing the System				Certification (over 3 years)	Grand Total	Annual Cost Saving	Payback Period	Pollution Reduction
	Training	Consultants	Other	Totals					
1	67,000	93,000	902,500	1,062,500	250,000	10,875,000	43,620,000	3 month	Yes
2	45,000	72,500	N/A	1,092,500	33,000	1,125,500	753,600	1.5 Years	Yes
3	40,000	N/A	N/A	2,940,000	304,000	3,244,000	1,560,000	2 Years	Yes
4	101,350	N/A	7,411,500	7,512,850	250,000	7,762,850	1,550,991	5 Years	Yes

Note: Costs in Baht: 1 Baht = 0.0255 USD

Obstacles

Problems and Barriers...



Lessons Learned

- Keys to Successful Implementation
  - Awareness of all levels of staff
  - Top-level commitment to policy
  - Adequate budget
  - A quality management system (ISO 9000)
  - Ability to identify environmental aspects and impacts

Lessons Learned

- Benefits Obtained
  - Waste reduction
  - Reduced consumption of resources
  - Better corporate image
  - Improved working environment
  - Cost savings
  - Decrease environmental problems
  - Increase working efficiency
  - Increase market potential
  - Reduced complaints

Lessons Learned

- Problems and Barriers
  - Identification of environmental aspects
  - Raising staff awareness of environmental impacts
  - Defining objectives and targets
  - Modifying procedures and processes

Questions

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For more information on EMS implementation in Thailand:

http://www.tei.or.th/main.htm